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TO: Director, National Institute for Occupational Safety and Health

FROM: California Fatality Assessment and Control Evaluation (FACE) Program

SUBJECT: Electrical engineer dies after receiving burns from an electrical panel in California.

SUMMARY

California FACE Report #92CA002
April 15, 1993

A 33 year-old male electrical engineer (victim) died from injuries sustained in an electrical fire, while trying to get the serial number from an electrical panel. The building where the incident occurred was being used as a movie production studio. The victim had come in for his final paycheck and was no longer employed by the production company at the time of the incident. He went to investigate a problem concerning an electrical panel which had caused a power outage and an employee injury one hour earlier that morning. During the incident co-workers heard screams and went to the location where the victim was located; however, no one witnessed the actual incident. When the co-workers arrived they found the victim on fire and screaming that he hadn't touched anything. The California FACE investigator concluded that, in order to prevent future similar occurrences, building owners and employers should:

- install and maintain a sprinkler system and fire extinguishers should be located on site and in good working order.
- conduct initial jobsite surveys to make sure the site is a safe place for all employees and subcontractors.
- provide and implement a written and documented safety training plan for all employees and subcontractors.
- develop and implement lockout/tagout procedures for all electrical panels.
- train employees in CPR and First Aid so that if the paramedics or police do not arrive immediately, victims can be administered basic CPR & First Aid.

INTRODUCTION

On March 26, 1992, at approximately 12:30 pm, a 33 year-old male electrical engineer received second and third degree burns to 90 % of his body, due to an explosion in an electrical panel. The victim lived for 6 days after the incident occurred, dying on April 1, 1992. The victim was not employed by the employer at the time of the incident. Notification of the incident was obtained from the California Occupational Safety & Health Administration (Cal/OSHA) office on April 1, 1992. Interviews were conducted by the California FACE investigator during the following week, with the producer and the employee who was injured in a first incident. The building owner refused to be interviewed and would not allow an onsite investigation to take place.

The employer (production company) had been working at this location for approximately 10 weeks, and was in the process of moving when the incident occurred. The production industry uses many locations for short periods of time and then moves on. The building had a prior history of electrical problems according to the Los Angeles Building and Safety office and the owner of a car dealership located downstairs below the studio. The producer stated that there were no sprinkler systems nor were there any fire extinguishers located on the premises.

INVESTIGATION

The production company was involved in making a movie at this location for approximately 10 weeks. The victim was not employed at the time of the incident. He had come in to pick up his final paycheck on the day of the incident. The receptionist informed him of an electrical problem, and also stated that an employee had been injured earlier that morning while working on an electrical panel. The first incident had occurred one hour earlier (at approximately 11:20 am) when an employee tried to hot wire an electrical panel with jumper cables. This individual received second degree burns to both his face and hands. The victim decided to look at the panel. He then came back to the reception area and called a representative of the manufacturer, who requested that the victim get the serial number from the panel. The victim returned to the panel to get the serial number. The producer and receptionist heard screams and responded to the scene. Upon arrival, they found the victim on fire and screaming that he hadn't touched anything. The producer grabbed a bucket of water and threw it on the victim. She stated that there were no fire extinguishers on site, and there was no sprinkler system in the building. The victim was in an enclosed space when the incident occurred. He was initially taken to a local medical center but was later

flown by helicopter to a burn center, due to the extent of his burns. He sustained second and third degree burns over 90% of his body. The victim lived for 6 days after the incident, dying on April 1, 1992.

CAUSE OF DEATH

The Medical Examiners report states that the cause of death was sepsis, due to multiorgan failure, secondary to massive thermal burns and inhalation injury.

RECOMMENDATION/DISCUSSION

Recommendation #1: Employers and building owners should have sprinkler systems installed and fire extinguishers on site.

Discussion: A sprinkler system or fire extinguishers could have prevented this incident from happening.

Recommendation #2: Employers should conduct an initial jobsite survey to make sure the work site is a safe place for all employees and subcontractors.

Discussion: A comprehensive jobsite survey should be conducted by the employer or building owner prior to the start of any work to identify all potential hazards that may confront the workers performing a task at that given site. This type of survey is particularly necessary when working with electrical systems which have had a known history of malfunction.

Recommendation #3: Develop, implement, and enforce a written safety policy and procedures designed to help workers recognize, understand, and control hazards.

Discussion: Under Title 8 of the California Code of Regulations (CCRs) section 3203 (a) it is required that all companies have a written Illness & Injury Prevention Plan. As also stated under OSHA Standard 29 of the Code of Federal Regulations (CFR) section 1926.21 (b) (2): "The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his/her work environment to control or eliminate any hazards or other exposure to illness or injury." Companies should evaluate the tasks performed by workers, identify potential hazards, develop and implement a safety program addressing these hazards, and provide worker training in safe work procedures. In this

particular incident the written procedures which would have been applicable could have focused on lockout/tagout for electrical systems.

Recommendation #4: Install lockout/tagout procedures for all electrical panels so that the power can be turned off and locked whenever there is an electrical problem.

Discussion: Under Title 8 of the CCRs section 3314 (f) (2), the employer must develop energy control procedures for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy. Development of procedural steps for the placement, removal and transfer of lockout devices or tagout devices and the other energy control devices should be implemented by employers. This incident could have been prevented if lockout procedures had been used after the initial incident earlier that morning.

Recommendation #5: Employees should be trained in CPR and First Aid. This training could make the difference between an injured employee living and dying. There should also be an emergency response procedure developed by all companies in case of an emergency.

Discussion: Under Title 8 of the CCRs section 3400 (b) employers should have employees trained in First Aid and CPR by an organization such as the American Red Cross. In this incident the two employees who arrived first at the scene could have administered basic first aid to the victim.

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